



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1419
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,355	12/28/2000	Donald J. Cook	BUR920000172US	8838

21918 7590 06/17/2003

DOWNS RACHLIN MARTIN PLLC
199 MAIN STREET
P O BOX 190
BURLINGTON, VT 05402-0190

EXAMINER

KOBERT, RUSSELL MARC

ART UNIT PAPER NUMBER

2829

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,355

Applicant(s)

COOK ET AL.

Examiner

Russell M Kobert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 7 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other.

1. Applicant's arguments filed April 8, 2003 have been fully considered but are not persuasive. Applicants' appear to be arguing an alternate combination and/or interpretation of the reading of the elements disclosed in Boyette Jr. et al upon the claimed subject matter as opposed to that which has been interpreted by the examiner with respect to claims 1 and 9.

Applicant's argue that Boyette, Jr. et al discloses a dual contact probe for performing a conventional Kelvin testing process in contrast to the meets and bounds of Applicant's claimed invention. Applicant's have only stated in the claims that the invention is used for testing a "DUT having a plurality of probe pads. The claims as disclosed do not articulate a specific test process. Therefore, the claimed invention can be applied to any test process for testing a DUT, not excluding Kelvin testing.

Applicant's argue that Boyette, Jr. et al discloses that probe contacts (14) of the two probe tips (10) are in electrical communication with a sensing circuit (22) that "measures the resulting voltage [applied by probe contacts 12] between the two probe contacts 14." Claims 1 and 9 as disclosed by Applicant's, do not provide any limitation to the number of probes that can be used by an applied prior art reference. In Boyette, Jr. et al there are two sets of probes, each set having a forcing probe and a sensing probe, contacting two probe contacts. Boyette states, col 3, line 40-43, that "a driving circuit (20) applies a driving voltage function between the two probe contacts (12), while a sensing circuit (22) measures the resulting voltage between the two probe contacts (14). The sensing circuit is not only functionally dependent on the difference of applied voltage signals at both probe contacts but is also a function of an applied voltage signal

at each contact and a sensed signal at each respective contact. The claimed invention only requires one pair of probes (a forcing probe and a sensing probe) to contact one pad. Boyette et al clearly shows at least one pair of probes that meets the bounds of the claimed invention. The limitation to having a forcing probe and a sensing probe does not limit the claimed invention to only one pair of probes as Applicant's dispute.

Applicant's further argue the existence of contamination on leads (16) is typically uniform across that lead so that the contact resistance between each probe contact (14) and corresponding lead (16) is substantially the same as the contact resistance between the corresponding probe contact (12) and that lead. The Examiner sees no relevance between this argument and that which is claimed. Once again, the meets and bounds of the claimed invention do not disclose Applicant's arguments noted supra.

With regard to Applicant's arguments to dependent claims 3-6, 8, 16 and 17, the following response supports the rejection under Boyette et al.

Having a voltmeter is considered an inherent characteristic of Boyette et al since sensing circuit 22 measures voltage. This is what a voltmeter does (i.e. measure voltage).

Having a probe card has been identified as carriage (26) of Boyette et al. Carriage (26) supports probes (12) and (14) and meets the boundaries of a card that supports probes, hence a probe card.

Having a sensing instrument is an anticipated feature, shown in Figure 1, of a "Sensing Circuit" identified as item (22).

The examiner has supplied a reading of the claimed invention on the disclosure of Boyette, Jr. et al, based upon the broadest reasonable interpretation of the claimed subject matter in contradistinction to Applicants' interpretation of the invention as claimed. As such, the invention as claimed, continues to read upon the teaching of Boyette, Jr. et al.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 3-6, 8, 9 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Boyette, Jr. et al (6023171).

Boyette, Jr. et al anticipates a system for testing a DUT (18) having a plurality of probe pads (see references to "single circuit test point(s)"; col 1, ln 11-23), comprising:

A forcing probe (12) for contacting and applying a first electrical signal to a first one of the plurality of probe pads;

A sensing probe (14) for contacting the first one of the plurality of probe pads and sensing a second electrical signal at the first one of the plurality of probe pads; and

A variable power supply (20) in electrical communication with the forcing probe and the sensing probe, the variable power supply capable of adjusting the first electrical signal based upon the second electrical signal (col 3, ln 50-58); as recited in claim 1.

Boyette, Jr. et al anticipates a method of testing a DUT having a plurality of probe pads, comprising the steps of:

Providing a first electrical signal to one of the plurality of probe pads;

Sensing a second electrical signal at the one of the plurality of probe pads; and

Adjusting the first electrical signal based upon the second electrical signal (col 3, ln 37-58); as recited in claim 9.

As to claim 3, having a voltmeter electrically connected between the sensing probe and the variable power supply, the voltmeter for measuring the second electrical signal is considered an inherent function between the Sensing and Driving Circuits;

As to claim 4, a probe card (26) supporting the forcing probe and the sensing probe is shown;

As to claim 5, first and second sensing electrodes (part of probe assemblies 10) and a sensing instrument (22), the first sensing electrode in electrical communication with the variable power supply, the second sensing electrode in electrical communication with the sensing instrument;

As to claim 6, the sensing instrument being a current meter is considered an inherent characteristic of Sensing Circuit (22);

As to claim 8, a feedback controller electrically connected between the sensing probe and the variable power supply is considered an inherent characteristic between the Sensing and Driving Circuits;

As to claim 15, having the first electrical signal provided via a forcing probe (12) and a power supply (20) in electrical communication with the forcing probe is shown;

As to claim 16, the power supply having a feedback controller for adjusting the first electrical signal based upon the second electrical signal is fully anticipated (col 3, In 37-58);

As to claim 17, the step of providing a feedback signal in proportion to the second electrical signal for adjusting the first electrical signal is considered an inherent characteristic of the apparatus of Boyette Jr. et al.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2, 10, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyette, Jr. et al (6023171) as applied to claims 1, 3-6, 8, 9 and 15-17 noted supra.

Although Boyette, Jr. et al does not specifically describe the limitations of claims 2, 10, 11, 12 and 14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a plurality of forcing probes and a plurality of variable power supplies, each of the forcing probes being in electrical communication with a corresponding one of the plurality of power supplies as mentioned in claim 2, a plurality of first electrical signals and a plurality of second electrical signals as further described in claim 11 and a plurality of forcing probes along with a plurality of power supplies as further described in claim 12 because Boyette et al discloses in the Background of the Invention (col 1, ln 11-23) that probe configurations for establishing contact with electronic circuits during testing processes are typically formed either as ganged probes or flying probes wherein Boyette et al further goes on to say, with ganged probes a large number of probe contacts simultaneously contact the circuit being tested and with flying probes a relatively small number of probes, typically two (could be more than two), are moved among the various circuit points to be connected to the test circuits in a sequential manner. One having ordinary skill in the art at the time the invention was made would have been motivated to supply a plurality

of power supplies, as noted supra, in a manner such that each power supply is associated with each set of ganged probes, or flying probes in order to supply power to each set of probes to permit independent operation of each set of probes. Moreover, simultaneous operation of each set of probes, as in the operation of ganged probes, would require separate power supplies, one power supply to each set of probes, to permit such operation thereof. Furthermore, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art (193 USPQ 8).

As to claim 10, measuring a third electrical signal at a second one of the plurality of probe pads only requires routine skill in the art because the process duplicates the sensing step of claim 9 for a duplicate probe pad;

As to claim 14, having each of the power supplies including a feedback controller for adjusting a corresponding one of the plurality of first electrical signals based upon a corresponding one of the plurality of second electrical signals is shown in Boyette, Jr. et al (col 3, ln 37-58).

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims and 7 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

A plurality of forcing probes, a plurality of variable power supplies and a switching matrix, the plurality of forcing probes being selectively connectable to the plurality of variable power supplies via the switching matrix as mentioned in claims 7 and 13 has not been found. It is further noted that the examiner's reasons are understood to be predicated upon consideration of each of the claims as a whole, and not upon any specific elements of the claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

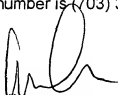
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Russell M. Kobert
Patent Examiner
Group Art Unit 2829
June 2, 2003



RAYMOND CURCIO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800